

February 2004

RB 2004-05

SWEET CORN MARKETING CHANNELS IN NEW YORK STATE

-- A NEW YORK SWEET CORN GROWER SURVEY



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Publication price per copy \$5.00
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ACKNOWLEDGEMENT

The author is Wen-fei L. Uva, Senior Extension Associate, in the Department of Applied Economics and Management, College of Agriculture and Life Sciences at Cornell University.

This work was supported by a joint research and extension program funded by Cornell University Agricultural Experiment Station (Hatch funds) and Cornell Cooperative Extension (Smith Lever funds).

Special appreciation goes to Ms. Monika Roth and Dr. Anusuya Rangarajan for providing input on project development and survey design, and Dr. Nelson Bills for reviewing the report. Finally, special thanks are extended to the growers for providing valuable comments and participating in the study.

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ABSTRACT

This study focused on investigating marketing channels and marketing strategies used by the New York sweet corn industry. In Spring 2001, a survey was conducted with vegetable growers in New York State. This report included responses from 482 New York vegetable farms which produced sweet corn in 2000. These respondents had total production acreage of 37,786 acres (67 percent of the state's total) and a total production value of \$38.9 million (57 percent of the state's total). Among the respondents, 369 (77 percent) produced sweet corn mainly for the fresh market (with more than 75 percent of sweet corn produced sold for fresh use). The rest of the growers surveyed (113 or 23 percent) produced sweet corn mainly for the processing market (with more than 75 percent of sweet corn produced sold for processing). No respondents fell in the middle.

- ***Marketing Sweet Corn for Processing***

Results from the survey showed that New York processing sweet corn growers used two major outlets to sell their crop – New York processors (used by 52 percent of growers and amounting to 51 percent of supply) and growers' cooperatives (used by 48 percent of growers and accounting for 49 percent of supply). Although not a major marketing outlet, 13 percent of processing sweet corn growers also produced some corn for fresh market sale, and they mainly sold the sweet corn directly to consumers and supermarkets.

Growers identified the limiting factors to processing sweet corn profitability as low yield, adverse weather, disease and pest problems, decreased consumer demand, increased input costs and oversupply. Opportunities identified by growers for future market development of processing sweet corn included use of sweet corn in new processing products, improving processor competitiveness, and branding.

- ***Marketing Fresh Market Sweet Corn***

The survey showed that the majority of New York fresh sweet corn supply was sold to wholesale channels (85 percent), and 15 percent was directly retailed to consumers by growers. Moreover, 78 percent of the sales value was generated from marketing wholesale and 22 percent was generated from direct retailing to consumer by growers.

Wholesale to supermarkets was the most important marketing channel for New York fresh market sweet corn. More than half (64 percent) of sweet corn produced in New York for fresh market sale was sold through this outlet. The second most important marketing channel is direct farmer-to-consumer retailing. Nonetheless, while this channel sold 22 percent of the New York fresh market sweet corn supply, about 90 percent of fresh sweet corn growers sold some of their corn through this channel.

Although not prevalent currently, some fresh sweet corn growers are seeing a growing trend in market concentration. One-third of the surveyed fresh sweet corn growers sent more than 50 percent of their sweet corn to the top ten buyers, and large operations were more likely to have more concentrated markets. Contract pricing was used by only 4 percent of the fresh sweet corn growers.

The marketing tools used most frequently by the surveyed fresh market sweet corn growers are newspaper advertising and personal relationships. However, the marketing tools rated most effective are “other” tools (mainly word-of-mouth and reputation), personal relationships and direct sales calls. Tools rated least effective are trade newspaper and magazine advertising, yellow pages in phone books, and web sites. Large farms generally have more marketing activities than medium- and small-size farms.

Surveyed growers indicated that the most limiting factors to fresh sweet corn profitability include low yield, adverse weather, price competition, pest and disease problems, competition from oversupply, and inconsistent quality. The top opportunities identified by the growers for future fresh sweet corn market development are increasing and diversifying marketing effort; supplying high quality and fresh products; and developing new and improved varieties (better quality, disease/pest resistant, higher yield, etc.).

This study showed that there are two distinct groups of sweet corn growers— growers producing sweet corn for fresh market and for processing. Processing sweet corn growers generally use only one main marketing outlet to sell their corn and do not use specific marketing tools to promote their sweet corn sales. In contrast, fresh market sweet corn growers usually use multiple marketing outlets to sell their products and apply different marketing tools to promote sweet corn sales. Therefore, while working with growers directly might be effective for developing fresh sweet corn markets, it would be more effective to work with processors when exploring market opportunities for processing sweet corn. Finally, a combination of increasing off-season demand, marketing catering to the general upward trend in vegetable use, focusing on new fresh and processing product development, and industry interest in supporting a research and promotion program are keys to expand sweet corn markets.

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INTRODUCTION

U.S. produce market is changing rapidly as a growing number of consumers place greater emphasis on value-added, variety, quality and health characteristics when making food purchase decisions. Moreover, navigating through the produce marketing channels has become more challenging for marketers, as a result of industry consolidation, especially the retail sector, increased global sourcing, buyer's demand for product quality, variety and year-round availability, and intense competition (Kaufman et al. 2000). The changing dynamics of produce production and marketing systems often complicate produce suppliers' efforts to match available supplies with market demands, especially for growers in New York State, who have shorter production season and are often smaller in size compared to their counterparts in the western United States. Therefore, to stay competitive, it is important for New York growers to better understand the produce marketing and distribution system and use the information to identify effective marketing strategies.

Sweet corn is the focus of this study because it is one of the most important vegetable crops produced in New York State, in terms of production as well as crop value. The agricultural Census Reports show that sweet corn production in New York has increased from 48,760 acres in 1982 to 66,581 acres in 1997 (1997 Census of Agriculture). Moreover, combining fresh and processing production, sweet corn had the highest farm production value for all vegetables produced in New York in 1999 and 2002 and was second to cabbage in 2000 and 2001 (New York Agricultural Statistics, various years). Sweet corn is also produced by growers throughout the state with concentration in the lower Hudson Valley and in Western and Central New York. The 2002 sweet corn production placed New York third among states, only behind Florida and California. In addition, sweet corn is one of the most popular vegetables in the U.S. and Canada, and it has a very dynamic marketing system. Therefore, studying sweet corn marketing channels will help us identify market opportunities for the New York sweet corn industry and allow us to understand many different aspects of the marketing and distribution system of the vegetable industry.

Sweet corn is consumed fresh and in many forms of processing products, and consumption is increasing in many areas around the world (Lucier and Lin, 2001). The U.S. per capita consumption of sweet corn has been steady around 28 pounds during the 1990s, after the growth in the 1980s. During the 1990s, enticed by the new sweeter and longer shelf-life varieties and value-added packaging, consumers enthusiastically embraced fresh-market sweet corn. The retail-weight equivalent of per capita use of fresh sweet corn increased from 6.7 pounds in 1990 to 9.4 pounds in 2003. Therefore, the last two decades were marked by a steady increase in the total amount of sweet corn produced for fresh market, and a decline in sweet corn destined for processing. Moreover, there has been a gradual shift from canned to frozen sweet corn over the years, and this shift continued during the 1990s. In 1995, per capita use of frozen sweet corn caught up and exceeded canned use. On a fresh-equivalent basis, per capita use of processing sweet corn (canned and frozen) totaled 17.7 pounds in 2003. Of this, 8.0 pounds were canned sweet corn, and 9.7 pounds were frozen sweet corn. Nonetheless, despite the long-term growth, domestic demand and growth for frozen sweet corn may have softened slightly since peaking at 10.4 pounds in 1996.

A wide range of distribution channels are used by growers to sell sweet corn, including various shipping operations and local direct wholesale and retail sales. The three distinct markets for sweet corn produced in the U.S. – fresh, canned, and frozen – had an estimated total production value of \$741 million in 2002. These markets largely operate independently, with separate supply, demand, and price characteristics as well as different market trends. Therefore, growers need to apply different marketing strategies for each market. Following the consumption trend, the U.S. production of fresh and frozen sweet corn has increased 43 and 18 percents, respectively, in the last decade. In contrast, the production of canned sweet corn decreased 22 percent during the same period (USDA, various years). Moreover, unlike many other vegetables, i.e. tomatoes and cucumbers, which have relative stable year-round demands and supplies from around the country and around globe to meet those demands, sweet corn has a strong seasonality in production as well as consumption and relative low import pressure. This seasonal gap in production and consumption of sweet corn represents opportunities for growers to develop new products and marketing programs to increase consumption and expand market demands.

However, the production and marketing strategies for the sweet corn industry in New York could be challenging. According to the 1997 Agricultural Census, there were 1,542 New York farms reporting sweet corn production in 1997, and the average size of sweet corn production area in New York was 43.18 acres per farm. This is relatively small compared to other major sweet corn production states, such as Florida (136.66 acres), Washington (149.52 acres), Oregon (81.58 acres), Wisconsin (65.34 acres), and Minnesota (62.02 acres). Moreover, the supply of fresh sweet corn production in New York is limited to July through November, with August through October being the primary season, which is later than the supply from competitors in the southern states. On the other hand, some market situations including relatively low import pressure for sweet corn supply and excitement which Northeast consumers have towards locally grown sweet corn present opportunities for the New York sweet corn industry. Therefore, the overall goal of this study is to better understand the supply-chain structure and marketing strategies used by the New York sweet corn industry, identify underlying opportunities and challenges for the industry, and help identify barriers and opportunities for sweet corn producers and build a viable industry in New York.

Specific topics investigated in this study include:

- What are the current levels of sweet corn production in New York for fresh and processing markets?
- What are the marketing channels used by the New York sweet corn industry to market fresh and processing sweet corn?
- What are the marketing tools used by New York growers to promote sweet corn sales, along with their effectiveness?
- What are the opportunities and limiting factors for New York sweet corn market development and profitability?

METHODS

This study was conducted through review of secondary data and a mail survey sent to vegetable growers in New York. A mail survey was developed to collect information on marketing channel used by New York sweet corn growers. Before mailing the surveys, the questionnaire was pre-tested by three sweet corn growers and revised based on input from these growers. In February 2001, the survey was mailed to 1,500 New York vegetable growers, and only growers with sweet corn production in 2000 were asked to complete the survey. The list was compiled with assistance from the New York Department of Agriculture and Markets and the New York Vegetable Growers Association. A postcard reminder and a second mailing were sent to the list four weeks and eight weeks, respectively, after the first mailing. The designed of the questionnaire as well as the mailing procedures conformed to the Total Design Method (TDM) as established by Dillman (1978).

In total, 678 questionnaires (45.2 percent) were returned. For various reasons, some of these were unusable (i.e., incomplete, no longer in business, or no sweet corn production to report). A total of 482 surveys (32.1 percent) are included in the final analysis. The growers were asked to answer the survey based on their operating information in 2000.

According to the New York Agricultural Statistics 2000-2001 annual report (New York State Dept. of Agriculture and Markets, 2001), New York produced a total of 56,500 acres or \$68.0 million of sweet corn in 2000. While about half (27,500 acres) of the acreage was harvested for fresh market sale, 83 percent of the crop value (\$56.4 million) was attributed to fresh market sales. The Cornell survey respondents showed a similar composition (Table 1). The average per acre sales for surveyed fresh and processing sweet corn are also comparable to the state statistics. The average per acre sales for sweet corn as a whole is \$174 less for the surveyed respondents than the state statistics. It could be because that higher percentage of processing sweet corn growers responded to the survey (72 percent of acreage) than fresh sweet corn growers (58 percent of acreage), and processing sweet corn had much lower per acre sales (around \$400/acre), compared to fresh market sweet corn (around \$2,000/acre).

Moreover, for the purpose of analyzing the results, surveyed respondents were grouped by farm size. Growers were classified into small, medium and large farms on the basis of their **total** farm sales in 2000. Small farms were defined as those with \$250,000 or less total farm sales, medium farms were defined as those with total farm sales between \$250,000 and \$750,000, and large farms were defined as those with more than \$750,000 total farm sales. Total farm sales was used to categorize farm sizes because majority of New York sweet corn growers also produce other vegetable crops and usually market a crop mix together. Therefore, it was determined that the value of total farm sales is more suitable in distinguishing marketing practices among different size growers than sweet corn sales alone. Moreover, distribution of the surveyed respondents' total farm sales is similar to the vegetable operations in the state (Table 2). Thus, the aggregate industry value could be extrapolated from the survey results

Table 1. The Profile of Surveyed Respondents Compared to State Census, Acreage and Size, 2000

	<u>Surveyed Respondents</u>			<u>New York State Statistics</u> ^a		
	Fresh Sweet Corn	Processing Sweet Corn	Total	Fresh Sweet Corn	Processing Sweet Corn	Total
Production Acreage (Acres)	15,836	20,950	37,786	27,500	29,000	56,500
% of Total Acreage	42%	58%	100%	49%	51%	100%
<i>Chi-square test = 0.988, P = 0.32^b</i>						
Production Value (\$ Million)	30.45	8.46	38.91	56.44	11.60	68.04
% of Total Value	78%	22%	100%	83%	17%	100%
<i>Chi-square test = 0.796, P = 0.37^c</i>						
Per acre sales (\$ Dollar)	1,923	404	1,030	2,052	400	1,204

^a New York Agricultural Statistics 2000-2001.^b Statistically nonsignificant^c Statistically nonsignificant**Table 2. The Profile of Surveyed Respondents Compared to State Census, by Size**

	<u>Surveyed Respondents</u>		<u>New York State Statistics</u> ^a	
	No. of Farms	% of Farms	No. of Vegetable Farms	% of Vegetable Farms
Farm by Total Sales				
Small < \$250,000	508	75%	1,359	85%
Medium \$250,000 – 750,000	108	16%	141	9%
Large > \$750,000	62	9%	85	6%
<i>Chi-square test = 3.185, P = 0.20^b</i>				
All	678	100%	1,585	100%

^a Source: New York Agricultural Statistics Service.^b Statistically nonsignificant

RESULTS AND ANALYSIS

This report includes responses from 482 New York vegetable farms which produced sweet corn in 2000. The results from the survey showed that New York growers produced sweet corn either mainly for the fresh market or mainly for the processing market. Among the 482 respondents, 369 (77 percent) produced sweet corn mainly for the fresh market, with more than 75 percent of sweet corn produced sold for fresh use. Growers in this group had an average sweet corn production of 53 acres and average sweet corn sales of \$82,520 in 2000. The rest of the growers surveyed (113 or 23 percent) produced mainly for the processing market, with more than 75 percent of sweet corn produced being sold for processing. Growers in this group had average sweet corn production of 223 acres and average sweet corn sales of \$74,867 in 2000. No respondents fell in the middle. Table 3 presents the profile of surveyed respondents.

Table 3. Characteristics of Surveyed New York Sweet Corn Growers, By Farm Size ^a

	No. of Farms	% of Farms	<u>Sweet Corn Sales</u>			<u>Sweet Corn Acreage</u>		
			Total Sales (\$ million)	Ave. Sales (\$)	St. Dev. (\$)	Total Acreage (acres)	Ave. Acreage (acres)	St Dev. (acres)
All Farms	482		\$ 38.23	\$79,315	\$236,181	44,861	93	204
Fresh Sweet Corn Farms								
Small Farms	258	70%	\$ 5.08	\$19,689	\$ 29,867	5,551	22	18
Medium Farms	71	22%	10.17	143,239	115,375	4,588	65	53
Large Farms	30	8%	15.20	506,389	817,173	9,560	318	368
All Fresh Sweet Corn Farms	369	100%	30.45	82,520	265,499	19,699	53	119
Processing Sweet Corn Farms								
Small Farms	39	35%	\$ 1.88	\$ 48,205	\$ 44,572	3,741	96	119
Medium Farms	37	33%	2.57	69,459	135,933	8,516	230	278
Large Farms	37	33%	4.01	108,378	146,249	13,005	352	439
All Processing Sweet Corn Farms	113	100%	8.46	74,867	121,181	25,162	223	317

^a Based on total annual farm sales: small - less than \$250,000, medium - \$250,000 to 750,000, and large - more than \$750,000.

It should be noted that because there are two distinct grower groups for fresh market and processing sweet corn sales, this report divides the analysis of marketing channels and practices used by growers by sweet corn for fresh market and for processing. Moreover, while all growers were asked to evaluate the effectiveness of different marketing tools for marketing sweet corn, not all of them answered this question. Most of the fresh sweet corn growers answered the question regarding their experiences and evaluation of different marketing tools, however, the majority of processing growers surveyed (96.5 percent) did not respond. The ones responded all marketed a portion of their sweet corn in the fresh market. It implies that most growers do not use specific marketing tools to promote their processing sweet corn sales. Therefore, only responses from the fresh sweet corn growers are included in the analysis of grower evaluation of

different marketing tools (Section 3). Results in this report are presented in the following topic areas: 1) Marketing of processing sweet corn by New York growers; 2) Marketing of fresh market sweet corn by New York growers; 3) Experience and evaluation of different marketing tools for fresh market sweet corn; and 4) Limiting factors and opportunities for marketing New York sweet corn.

1. Marketing Processing Sweet Corn by New York Growers

In order to determine the ways New York growers sold their processing sweet corn, respondents were asked to identify marketing channels which they used to sell their processing sweet corn in 2000. Marketing channels identified in this survey for processing sweet corn include selling to New York processors, selling to out-of-state processors, selling to growers' cooperatives, and "other" methods. When selecting "other" methods, respondents were asked to specify the method used. In addition, growers were asked to identify the percent of processing sweet corn sales made through each method. To extrapolate the total supply of processing sweet corn produced in New York, growers were also asked to identify their harvested acreage, average yield, and average price received for processing sweet corn in 2000.

According to the New York Agricultural Statistics annual report, New York growers produced 154,650 tons of sweet corn for processing and generated sales of \$11.6 million in 2000. Results from this study showed that 24 percent of New York sweet corn growers produced sweet corn for processing in 2000. Although not a major marketing outlet, 13 percent of processing sweet corn growers also marketed some of their crop in the fresh market, mainly through direct selling to consumers and to local supermarkets. The average price received by New York growers for processing sweet corn was \$65.56 per ton in 2000, with a range from \$39.50 per ton to \$77.61 per ton.

The survey results show that the two major outlets for New York processing sweet corn are New York processors and growers' cooperatives, and growers generally use only one main marketing outlet to sell their sweet corn in the processing market. About half (52 percent) of New York processing sweet corn supply was sold by 52 percent of growers to New York processors, and the rest (48 percent) of the supply was sold by 48 percent of growers to growers' cooperatives. Figure 1 shows the product flow of the processing sweet corn supply sold by New York growers in 2000.

Table 4 presents marketing channels used by New York growers to sell processing sweet corn in 2000 by farm size. The results show that farms of different sizes had similar marketing patterns when selling processing sweet corn. Among respondents who used New York processors as the main marketing channel for their processing sweet corn, medium-size farms averaged higher sweet corn sales than other size farms. Moreover, medium-size farms that sold to New York processors also averaged higher sweet corn sales than medium farms that sold to growers' cooperatives. This result implies that medium-size farms mainly producing processing sweet corn are more likely to sell to New York processors, and medium-size farms with more diversified cropping systems are more likely to sell through growers' cooperatives.

Figure 1. The Product Flow of Processing Sweet Corn

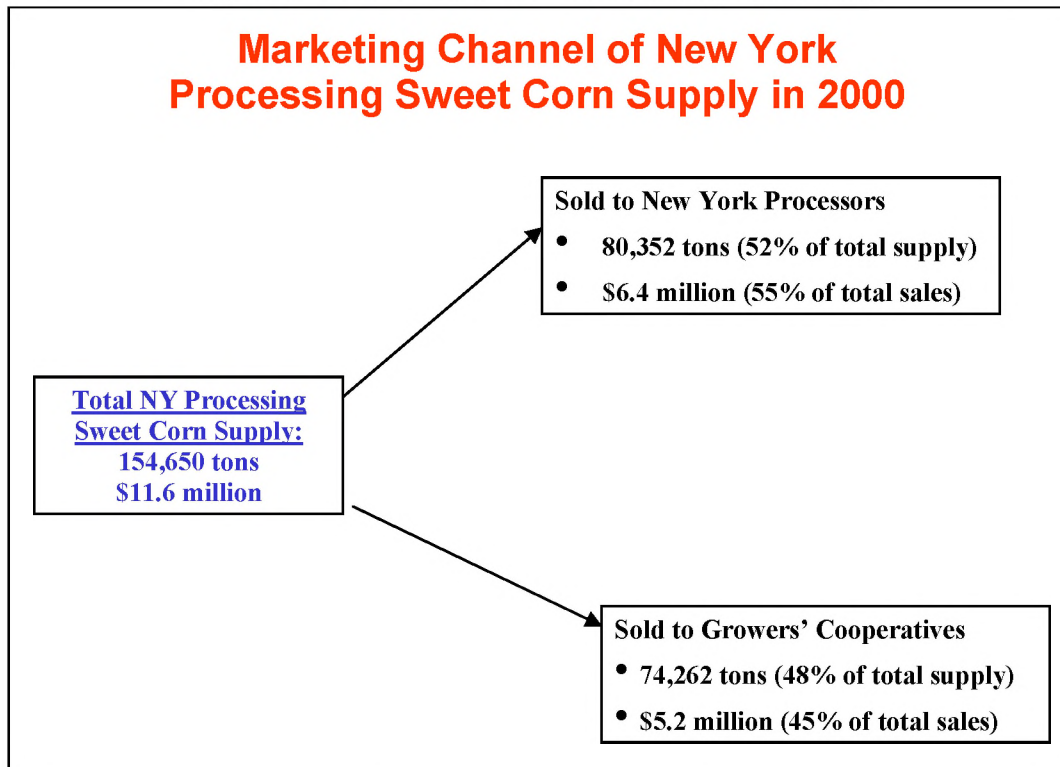


Table 4. Marketing Channels Used by New York Growers to Sell Processing Sweet Corn, by Farm Size ^a, 2000

Marketing Channels	All farms (N=113)	Small farms (N=37)	Medium farms (N=37)	Large farms (N=39)
All Processing Sweet Corn				
# of growers	113	37	37	39
Average processing sweet corn sales (\$)	\$ 90,471	\$ 40,360	\$ 87,211	\$135,866
Average processing sweet corn tonnage	1,465	625	1,409	2,328
Sweet Corn Sold to NY Processor				
# of growers	59	17	20	22
% of growers	52%	47%	53%	56%
Average processing sweet corn sales (\$)	\$ 94,090	\$ 19,329	\$ 124,201	\$ 109,843
Average processing sweet corn tonnage	1,428	390	1,853	1,583
Sweet Corn Sold to Growers' Coop				
# of growers	54	20	17	17
% of growers	48%	53%	47%	44%
Average processing sweet corn sales (\$)	\$ 86,274	\$ 56,133	\$ 44,937	\$ 162,058
Average processing sweet corn tonnage	1,517	879	901	2,862

^a Small farms had less than \$250,000 in sales in 2000; medium farms had total sales between \$250,000 and \$750,000 in 2000; and large farms had total sales of more than \$750,000 in 2000.

2. Marketing of Fresh Market Sweet Corn by New York Growers

To determine the relative importance of different marketing channels for New York fresh market sweet corn, growers were asked to specify marketing channels used to sell their fresh market sweet corn in 2000. Three categories of marketing channels for fresh market sweet corn were identified in this survey: **wholesale channels**, including wholesale to shippers/packers/brokers, wholesale to growers' cooperatives, wholesale to supermarkets & grocery stores, wholesale to food service (restaurants, schools, etc.), and wholesale to retail farm stands and farmers' market vendors; **retail channels**, including internet sales, grower's own roadside markets or farmers' market stalls, pick-your-own (PYO) and community supported agriculture (CSA); and **"other" methods**. When selecting "other" methods, respondents were asked to specify the method used. In addition, growers were asked to identify the value of fresh sweet corn sold through each channel and the percent of which was sold to out-of-state buyers.

In order to extrapolate the total supply of fresh sweet corn marketed by New York growers, respondents were asked to identify their harvested acreage, average yield, and source of corn sold for fresh market if they purchased sweet corn to resell in 2000. To better understand the marketing of New York's fresh sweet corn supply, respondents were also asked to describe their marketing season, average wholesale and retail prices received, use of contracts, importance of the top ten largest buyers for fresh market sweet corn, and expected changes in their marketing strategies over the next 5 years.

2.1 *Product Flow of New York Fresh Market Sweet Corn Supply*

According to the New York Agricultural Statistics annual report (2001), New York produced 2,613 thousand hundred weight (cwt) or 24.9 million dozen ears of sweet corn for the fresh market. The survey showed that while most fresh market sweet corn growers (74 percent) started the season in July and ended in September (62 percent), 3 percent of the growers started their fresh sweet corn season in June, and 1 percent extended the season into November. Among surveyed growers who marketed their sweet corn for fresh use, 32 percent also purchased some sweet corn from other growers to resell. However, the amount of sweet corn purchased by New York growers to resell in the fresh market was minimal in 2000 (146 thousand cwt, or 1.4 million dozen). Among which, only 4 percent of sweet corn purchased by growers to resell in the fresh market was from out-of-state sources. Therefore, the total supply of fresh market sweet corn sold by New York growers was 2,619 thousand cwt or 25.0 million dozen in 2000, and the majority was produced in the state.

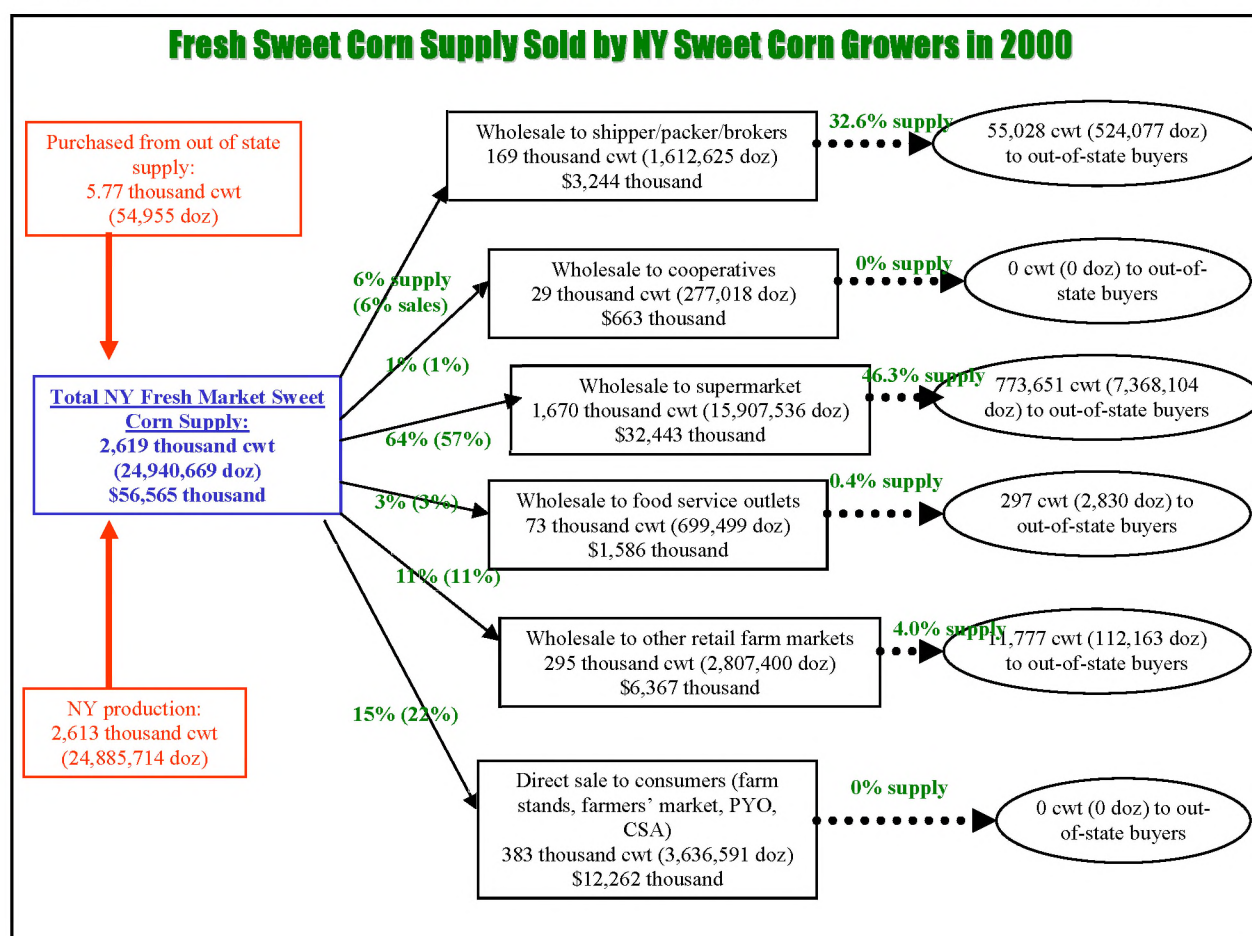
About 85 percent of the New York fresh sweet corn supply went to wholesale channels, and 15 percent was retailed to consumers by the growers. Moreover, due to higher prices received from retail sales, 78 percent of the sales value was generated from marketing wholesale, and 22 percent was generated from direct retail to consumers by growers. Figure 2 presents the product flow of the fresh market sweet corn supply sold by New York sweet corn growers through different marketing channels in 2000. Supermarkets were the most important marketing outlet for New York sweet corn. More than half (64 percent) of the New York fresh market sweet corn supply was sold through this channel, generating 57 percent of total sales value. The second most important marketing channel was farmer direct sales to consumers (including farm stands,

farmers' markets, PYO and CSA). This channel sold 15 percent of New York's fresh market sweet corn supply and generated 22 percent of its total sales value. On the other hand, only 1 and 3 percent of the New York fresh market sweet corn supply in 2000 were sold through grower cooperatives and food service outlets, respectively.

In 2000, about one-third (32 percent) of New York's fresh market sweet corn supply was sold to out-of-state buyers. Growers were more likely to ship their fresh sweet corn out-of-state to supermarket buyers and shipper/packer/brokers. About half (46.3 percent) of sweet corn sold to supermarkets went to out of state buyers, and about one-third (32.6 percent) of sweet corn sold to shipper/packer/brokers was sold to out-of-state buyers.

In addition to being the major market channel for growers, supermarkets are also a major point of purchase of fresh sweet corn for consumers in several cities in the United States, as reported in a 2001 study conducted by the Florida Agricultural Market Research Center (Degner, et al. 2001). Therefore, growers should pay special attention and develop marketing strategies to meet the needs of buyers in supermarket firms when marketing fresh sweet corn. On the other hand, the results showed that food service channel is underutilized by growers. Additional market assessment could be done with this channel to see if there is potential market opportunity for New York sweet corn.

Figure 2. The Product Flow of Fresh Sweet Corn Supply Sold by New York Growers in 2000



2.2 Fresh Sweet Corn Prices Received by Growers

Growers were asked to identify the average wholesale and retail prices they received for fresh market sweet corn in 2000. In order to compare the prices among growers, they were also asked to specify the packaging unit of the price received, such as a 5-dozen-ear bag, 48-ear-count crate or other.

The fresh market sweet corn price received by surveyed New York growers averaged \$2.79 per dozen or \$26.61 per hundredweight (cwt). The average wholesale price is \$1.97 per dozen or \$18.72 per cwt, with a range from \$1.00 per dozen (or \$9.52 per cwt) to \$3.50 per dozen (or \$33.32 per cwt). The average price received by growers when direct retailing to consumers was \$3.14 per dozen or \$29.87 per cwt with a range from \$2.00 per dozen (or \$19.04 per cwt) to \$5.00 per dozen (or \$47.60 per cwt). Table 5 shows fresh sweet corn prices received by New York growers in 2000 by marketing channel and by farm size.

The results show that large farms received a lower average wholesale price for their fresh market sweet corn (\$1.69 per dozen or \$15.64 per cwt) and had higher price volatility compared to small and medium size farms. On the other hand, large farms received a slightly higher average retail price for their fresh market sweet corn (\$3.35 per dozen or \$31.86 per cwt) than small and medium size farms. This may be due to large wholesale farms had higher price pressure from other large buyers and competitors, and large retail farms had greater marketing advantage compared to medium and small retail farms.

The wide range of prices received by growers implies that whether selling through wholesale or retail channels, growers could find buyers who are willing to pay higher prices for the product they want. Growers should try to identify those markets and produce products to meet the specific demands of those markets and avoid getting into a price war among suppliers.

Table 5. Fresh Sweet Corn Prices Received by New York Growers in 2000, by Marketing Channel and Farm Size

Marketing Channels	All farms (N=369)		Small farms ^a (N=258)		Medium farms ^a (N=71)		Large farms ^a (N=30)	
	<i>Per dozen</i>	<i>Per cwt</i>	<i>Per dozen</i>	<i>Per cwt</i>	<i>Per dozen</i>	<i>Per cwt</i>	<i>Per dozen</i>	<i>Per cwt</i>
Wholesale								
Average Price	\$ 1.97	\$ 18.72	\$ 2.01	\$ 19.16	\$ 2.01	\$ 19.15	\$ 1.69	\$ 15.64
Standard Deviation	0.43	4.27	0.39	3.75	0.45	4.32	0.53	5.49
Minimum	1.00	9.52	1.20	11.42	1.30	12.38	1.00	4.57
Maximum	3.50	33.32	3.06	29.16	3.50	33.32	2.52	23.99
Retail								
Average Price	\$ 3.14	\$ 29.87	\$ 3.09	\$ 29.43	\$ 3.24	\$ 30.86	\$ 3.35	\$ 31.86
Standard Deviation	0.60	5.74	0.56	5.36	0.70	6.66	0.71	6.77
Minimum	2.00	19.04	2.00	19.04	2.00	19.04	2.00	19.04
Maximum	5.00	47.60	5.00	47.60	4.80	45.70	4.00	38.08

^a Small farms had less than \$250,000 in sales in 2000; medium farms had total sales between \$250,000 and \$750,000 in 2000; and large farms had total sales of more than \$750,000 in 2000.

2.3 *Fresh Market Sweet Corn Marketing Channels*

In contrast with processing growers who generally use only one main marketing outlet to sell their sweet corn, fresh market sweet corn growers who usually use multiple marketing channels to sell their products. According to the survey, among the growers who produced sweet corn for fresh market, 54 percent used wholesale channels to market their sweet corn and 89 percent direct retailed their sweet corn to consumers in 2000. Tables 6 and 7 present the wholesale and retail marketing channels used by the surveyed New York fresh sweet corn growers.

The two most common wholesale outlets used by growers of all sizes to market fresh sweet corn were supermarkets/grocery stores, and retail farm stands/farmers' market vendors. Although more growers wholesale to retail farm stands/farmers' market vendors, wholesale to supermarkets and grocery stores generated much higher average sales, especially for large farms. Large farms are also more likely to sell to out-of-state supermarket and grocery store buyers. Some large farms sold up to 95 percent of their sweet corn through this channel to out-of-state buyers in 2000, averaging 24 percent of their supply. Medium-size farms are more likely to wholesale fresh market sweet corn to shipper/packer/brokers than farms of other sizes. This could be because medium-size farms do not have enough volume to supply large retailers, and shipper/packer/brokers would serve as a middleman to source supplies for larger buyers. Some surveyed medium-size farms sold up to 60 percent of their fresh market sweet corn supply to out-of-state shipper/packer/brokers. Grower cooperatives and food service are the least utilized wholesale channels, used by 1 and 9 percent of participating fresh market sweet corn growers, respectively.

The most important retail channel for selling fresh market sweet corn is definitely through growers' own retail markets and farmers' market stalls. A majority of surveyed fresh market sweet corn growers (89 percent) sell some of their corn through this channel. No growers responded used the internet to sell fresh market sweet corn. Selling sweet corn through other retail outlets such as pick-your-own, CSA, and "other" outlets was not as important for surveyed New York sweet corn growers. "Other" outlets used by respondents included race tracks and local, regional or state fairs.

Overall, the survey results show that most New York fresh market sweet corn growers focus on wholesale and retail buyers within New York State rather than out-of-state markets. Moreover, results from a Cornell survey with supermarket firms in New York, New Jersey and Pennsylvania areas also show that supermarkets are more likely to buy fresh sweet corn from suppliers in their own states when local supply is available. Therefore, it is important for New York fresh sweet corn growers to first focus their marketing efforts on buyers in New York, develop and maintain excellent relationships with their clients, and ensure customer satisfaction (Cuellar and Uva 2003).

Table 6. Wholesale Marketing Channels Used by New York Growers to Sell Fresh Market Sweet Corn, 2000

Marketing Channels	All farms (N=369)	Small farms ^a (N=258)	Medium farms ^a (N=71)	Large farms ^a (N=30)
<i>To shippers/packers/brokers</i>				
% of farms	11	6	24	17
Average sweet corn sales ^b (\$)	35,632	21,800	47,857	70,000
Average % sales to out-of-state buyers ^b	10.9	6.0	14.8	5.0
<i>To grower cooperatives</i>				
% of farms	1	2	0	0
Average sweet corn sales ^b (\$)	51,000	51,000	N/A	N/A
Average % sales to out-of-state buyers ^b	0.0	0.0	N/A	N/A
<i>To supermarkets/grocery stores</i>				
% of farms	27	21	33	58
Average sweet corn sales ^b (\$)	127,931	13,859	52,045	589,398
Average % sales to out-of-state buyers ^b	8.1	3.7	5.6	23.9
<i>To food service (restaurants, schools, etc.)</i>				
% of farms	9	7	12	17
Average sweet corn sales ^b (\$)	20,331	5,247	7,375	91,500
Average % sales to out-of-state buyers ^b	1.1	0.3	3.3	0.0
<i>To farm stands & farmers' market vendors</i>				
% of farms	37	30	45	67
Average sweet corn sales ^b (\$)	17,803	10,857	15,293	50,298
Average % sales to out-of-state buyers ^b	2.7	2.0	4.7	1.3

^a Small farms had less than \$250,000 in sales in 2000; medium farms had total sales between \$250,000 and \$750,000 in 2000; and large farms had total sales of more than \$750,000 in 2000.

^b Averages are not weighted by farm size or volume sold.

Table 7. Retail Marketing Channels Used by New York Growers to Sell Fresh Market Sweet Corn, 2000

Marketing Channels	All farms (N=369)	Small farms ^a (N=258)	Medium farms ^a (N=71)	Large farms ^a (N=30)
<i>At growers' own roadside markets or farmers' market stalls</i>				
% of farms	89	92	85	75
Average sweet corn sales ^b (\$)	14,533	9,395	22,291	41,212
<i>Through Pick-your-own</i>				
% of farms	3	4	3	0
Average sweet corn sales ^b (\$)	1,430	1,500	1,000	N/A
<i>Through community support agriculture</i>				
% of farms	5	7	0	6
Average sweet corn sales ^b (\$)	9,740	5,560	N/A	45,581
<i>Others</i>				
% of farms	1	1	0	0
Average sweet corn sales ^b (\$)	985	985	N/A	N/A

^a Small farms had less than \$250,000 in sales in 2000; medium farms had total sales between \$250,000 and \$750,000 in 2000; and large farms had total sales of more than \$750,000 in 2000.

^b Averages are not weighted by farm size or volume sold.

2.4 Use of Contract and Market Concentration

To explore the use of contract pricing in marketing fresh sweet corn among participating farms, respondents were asked to provide information on their use of contract pricing to sell fresh sweet corn in 2000 and, if they used contract pricing, to identify the percentage of fresh sweet corn sold under contract. Results indicate that contract pricing is not employed by the majority of New York growers to sell fresh market sweet corn. Only 4 percent of growers reported selling fresh sweet corn under contract pricing, and less than 1 percent of the New York fresh sweet corn supply was sold under contract pricing in 2000.

Some growers are seeing a growing trend in market concentration. Respondents were asked to identify the percentage of their fresh sweet corn purchased by their top ten buyers combined, and how they expect this percentage to change in the next 5 years. Table 8 shows that among the 332 growers who responded to this question, more than half (54 percent) responded that less than 10 percent of their total sweet corn supply was purchased by their top ten customers combined in 2000, while one-third (33 percent) of the respondents sent more than 50 percent of their fresh sweet corn to the top ten buyers.

Farms are likely to have a more concentrated market for their fresh market sweet corn when they get larger. Among growers who responded to this question, 62 percent of the small farm respondents sold less than 10 percent of their fresh sweet corn to the top ten buyers, while 70 percent of the large farms and 43 percent of the medium-size farms sent more than 50 percent of their fresh sweet corn to their top ten buyers in 2000.

Although 78 percent of the surveyed growers did not expect the level of buyer concentration to change in the next 5 years, 17 percent expected the importance of their top ten buyers to increase in the next 5 years. Medium-sized farms are more likely to expect an increase in the market share of their top ten fresh sweet corn buyers. On the other hand, only 1 percent of small farms expected the market concentration to increase.

Table 8. Market Concentration of Fresh Market Sweet Corn and Expected Changes in the Next 5 Year

Market Concentration	All farms (N=369)		Small farms ^a (N=258)		Medium farms ^a (N=71)		Large farms ^a (N=30)	
	No. firms	% firms	No. firms	% firms	No. firms	% firms	No. firms	% firms
Percent of fresh sweet corn sales to the top ten buyers								
Less than 5%	167	50	138	58	25	36	5	20
5-10%	12	4	10	4	2	4	0	0
11-25%	27	8	20	8	5	7	2	10
26-50%	17	5	10	4	7	11	0	0
More than 50%	108	33	61	26	30	43	17	70
Total	332	100	239	100	69	100	25	100
Expected changes in the next 5 years								
Increase	54	17	32	1	20	29	2	10
Decrease	17	5	15	6	0	0	2	10
Remain the same	256	78	187	80	49	71	20	80
Total	327	100	234	100	69	100	25	100

^a Small farms had less than \$250,000 in sales in 2000; medium farms had total sales between \$250,000 and \$750,000 in 2000; and large farms had total sales of more than \$750,000 in 2000.

3. Experience and Evaluation of Different Marketing Tools for Selling Fresh Market Sweet Corn

To assess how New York growers are marketing sweet corn and the effectiveness of these methods, respondents were asked to provide information on the marketing tools they used to promote their sweet corn sales and the annual budget for each marketing tool used. The list of marketing tools presented to respondents included newspaper advertising, television advertising, radio advertising, billboard and road signs, yellow pages in phone books, direct mailing, web site, trade newspaper and magazine advertising, shipper's directories, direct sales calls, personal relationships, and newsletter and flyers. They were also provided with the option to indicate "other" tools used and were asked to specify them. In addition, respondents were asked to rate on a scale of 1 to 5 the effectiveness of those marketing tools used, (1 = not effective, 3 = average effectiveness, and 5 = very effective).

All surveyed growers were asked to answer this question; however, while the majority of fresh sweet corn growers responded, only 3.5 percent of processing growers surveyed provided answers to this question, and all processing growers responded also marketed a portion of their sweet corn in the fresh market. As stated earlier, this implies that a majority of processing growers do not use specific marketing tools to promote their processing sweet corn sales. Therefore, results presented in this section are based on responses from the fresh sweet corn growers only (Table 9).

Marketing tools used most frequently by surveyed fresh sweet corn growers are newspaper advertising and personal relationships, used by 46 percent and 50 percent, respectively, of the respondents. However, the marketing tools rated most effective (over 4) are other tools (4.5), personal relationships (4.4) and direct sales calls (4.1). Word-of-mouth and reputation are identified by majority of the growers (75 percent) when indicating using other marketing tools. Other marketing tools that received higher-than-average ratings are billboard and road signs (3.9 percent), newsletters and flyers (3.6 percent), direct mailing (3.4 percent), and newspaper advertising (3.1 percent). Tools rated least effective are trade newspaper and magazine advertising (2.0 percent), yellow pages in phone books (2.1 percent), and web site (2.1 percent).

Different size farms have different opinions on various marketing tools. Small- and medium-size farms are most likely to use newspaper advertising and personal relationships to promote their fresh market sweet corn sales. It should be noted that more than 80 percent of medium-size farms used newspaper advertising. There is no dominant marketing tool among small farms in this survey. All marketing tools were used by less than 50 percent of small farms. On the other hand, many of the marketing tools were used by more than half of the large farms. This implies that large farms have more marketing activities.

Small-farm respondents rated other tools (4.5), billboards and road signs (4.4), and personal relationships (4.4) as having the highest effectiveness. The majority who selected other tools falls into the word-of-mouth and reputation categories. Used by only 2 percent of small farms, listing in shippers' directories was rated as least effective (1.0). Web site only received an average rating of 2.0. Medium farms who responded to this question rated personal relationship (4.6) and direct sales calls (4.5) most effective, followed by other tools (4.2), trade shows (4.0),

and shippers' directories (4.0). All large farms used direct sales calls and personal relationships to market their corn and rated both tools very effective (4.6). Another highly rated tool among large farms is other tools, which was rated 5.0, and a majority again mentioned word-of-mouth and reputation. Television advertising and yellow page listing in phone books were rated the lowest (1.0) by farms in this category; newsletters and flyers was also rated low at 1.5.

Table 10 shows that large farms generally spent more on different marketing tools than did medium- and small-size farms. Trade shows averaged the highest costs among listed marketing tools, with an average annual budget of \$2,258.

Table 9. Marketing Tools Used by New York Fresh Market Sweet Corn Growers and Their Effectiveness

Marketing Tools	All farms (N=369)		Small farms ^a (N=258)		Medium farms ^a (N=71)		Large farms ^a (N=30)	
	% farms	Ave. rating	% farms	Ave. rating	% farms	Ave. rating	% farms	Ave. rating
Newspaper advertising	46	3.1	36	3.1	83	3.2	67	3.0
Television advertising	4	2.5	2	3.5	0	N/A	50	1.0
Radio advertising	13	2.9	9	3.2	26	2.8	50	2.0
Billboards & road signs	16	3.9	13	4.4	17	3.8	67	2.3
Yellow pages in phone books	9	2.1	6	2.3	13	2.0	50	1.0
Direct mailing	10	3.4	7	3.6	22	3.4	33	2.5
Web site	7	2.1	4	2.0	13	2.3	50	2.0
Trade shows	4	2.6	3	2.7	4	4.0	17	2.0
Trade newspaper & magazine advertising	1	2.0	0	N/A	4	2.0	17	2.0
Shippers' directories	5	2.6	2	1.0	4	4.0	67	3.0
Direct sales calls	15	4.1	13	3.8	13	4.5	100	4.6
Personal relationships	50	4.4	45	4.4	57	4.6	100	4.6
Newsletters & flyers	14	3.6	10	3.9	26	3.8	33	1.5
Others	19	4.5	16	4.5	22	4.2	67	5.0

^a Small farms had less than \$250,000 in sales in 2000; medium farms had total sales between \$250,000 and \$750,000 in 2000; and large farms had total sales of more than \$750,000 in 2000.

Table 10. Annual Budget for Different Marketing Tools Used to Promote New York Fresh Market Sweet Corn, by Farm Size

Marketing Tools	Marketing Budget			
	All farms	Small farms ^a	Medium farms ^a	Large farms ^a
	Average ^b (\$)			
Newspaper advertising	517	548	444	675
Television advertising	567	350	N/A	1,000
Radio advertising	871	956	867	500
Billboards & road signs	593	113	150	4,600
Yellow pages in phone books	192	180	207	200
Direct mailing	392	283	400	1,000
Web site	398	400	367	500
Trade shows	2,258	2,515	1,500	2,500
Trade newspaper & magazine advertising	875	N/A	750	500
Shippers' directories	100	50	100	200
Direct sales calls	118	74	300	200
Personal relationships	100	50	50	625
Newsletters & flyers	348	153	670	500
Others	65	86	35	0
Total Marketing Budget	1,054	779	1,024	3,492

^a Small farms had less than \$250,000 in sales in 2000; medium farms had total sales between \$250,000 and \$750,000 in 2000; and large farms had total sales of more than \$750,000 in 2000.

^b Averages are not weighted by farm size or volume sold.

4. Limiting Factors and Opportunities for Sweet Corn Profitability and Market Development

To better understand the challenges and opportunities for the New York sweet corn industry, growers were asked to describe opportunities and limiting factors for marketing their sweet corn. In their own words, respondents identified the top three factors that most limit the profitability of their fresh market and processing sweet corn sales and the top three opportunities for future sweet corn market development. Respondents were also asked to specify the limiting factors and opportunities from the most important to the third most important.

4.1 Limiting Factors and Opportunities for Fresh Market Sweet Corn

Table 11 shows the most limiting factors for profitability and the most important opportunities for sweet corn market development as identified by fresh market sweet corn growers. The top three limiting factors to fresh sweet corn profitability identified by the respondents include low yield due to weather, pest and disease problems, and price competition from local producers as well as supermarkets. Competition and oversupply were also important factors. When analyzed by farm size, medium farms also identified supplying consistent, high quality sweet corn for the fresh market as one of the top challenges. Moreover, large farms felt that stagnant demand for

fresh market corn was a greater challenge and rated this factor of higher importance than low yield, competition, and pest/disease problems. Other factors mentioned by growers included lack of dependable labor, high input costs, and the short growing season.

The top three opportunities for future fresh sweet corn market development as identified by the respondents are increasing and diversifying marketing efforts, supplying high quality and fresh products, and developing new and improved varieties (better quality, disease/pest resistance, higher yield, etc.). The results are similar for small- and medium-size farms. In addition, small farms identified expanding season, direct marketing to consumers, and improving quality and yield as other important opportunities; and medium-size farms also identified expanding season, direct marketing to consumers, pest control, and collaborating with other marketers as important opportunities. However, no large farms identified any opportunities in the survey.

Table 11. Most Limiting Factors and Opportunities for Fresh Sweet Corn Market Development as Identified by New York Growers

Limiting Factors	Limiting Factors to Fresh Sweet Corn Profitability							
	All farms (N=369)		Small farms^a (N=258)		Medium farms^a (N=71)		Large farms^a (N=30)	
	% Farms ^b	Weighted Sum ^c	% Farms ^b	Weighted Sum ^c	% Farms ^b	Weighted Sum ^c	% Farms ^b	Weighted Sum ^c
Low yield & adverse weather	20	172	22	128	18	42	8	2
Price competition/low prices	14	103	15	81	9	10	17	12
Pest & disease problems	12	91	14	74	9	17	0	0
Competition & oversupply	9	74	10	64	6	5	8	5
Consistent high quality corn	5	39	4	22	9	17	0	0
	Opportunities for Future Fresh Sweet Corn Market Development							
	All farms (N=369)		Small farms^a (N=258)		Medium farms^a (N=71)		Large farms^a (N=30)	
	% Farms ^b	Weighted Sum ^c	% Farms ^b	Weighted Sum ^c	% Farms ^b	Weighted Sum ^c	% Farms ^b	Weighted Sum ^c
Increase and diversify marketing effort	8	69	10	57	6	12	0	0
Supply high quality and fresh product	7	61	8	47	6	15	0	0
Develop new varieties (early season, pest resistant)	6	44	6	30	9	15	0	0

^a Small farms had less than \$250,000 in sales in 2000; medium farms had total sales between \$250,000 and \$750,000 in 2000; and large farms had total sales of more than \$750,000 in 2000.

^b Not all respondents answered this question. Respondents' comments were categorized by key words into the major groups.

^c Weighted sum was calculated by 3 * number of most important ranking + 2 * number of the second most important ranking + 1 * number of the third most important ranking.

4.2 *Limiting Factors and Opportunities for Processing Sweet Corn*

The processing sweet corn growers were asked to identify the factors that most limited processing sweet corn profitability and the top opportunities for future market development of processing sweet corn (Table 12). Less than 10 percent of processing sweet corn respondents answered this question. Among the answers given, the three most limiting factors identified were low yield and adverse weather, pest/disease problems and increased input costs. Oversupply was also mentioned as a limiting factor. The opportunities identified include use of sweet corn in new processing products, improving processor competitiveness, branding and developing new, higher yield and disease-resistance varieties. Due to the low number of responses, results were not analyzed by different farm sizes.

Table 12. Most Limiting Factors and Opportunities for Processing Sweet Corn Market Development as Identified by New York Growers

	% of Processing Sweet Corn Farms ^a (N=113)	Weighted Sum ^b
<u>Limiting Factors to Processing Sweet Corn Profitability</u>		
Low yield and adverse weather	4	10
Disease and pest problems	4	9
Low demand	2	7
Increased input costs	2	7
Oversupply	2	5
	% of Processing Sweet Corn Farms ^a (N=113)	Weighted Sum ^b
<u>Opportunities to Processing Sweet Corn Market</u>		
Use of sweet corn in new processing products	2	7
Improve processor competitiveness	2	7
Branding	2	5
New varieties (high yield, disease resistant)	2	2

^a Not all respondents answered this question. Respondents' comments were categorized by key words into the major groups.

^b Weighted sum was calculated by 3 * number of most important ranking + 2 * number of the second most important ranking + 1 * number of the third most important ranking.

CONCLUSIONS

- **Processing vs. Fresh Market Sweet Corn Growers**

The results of this survey provide a profile of New York sweet corn growers and the marketing channels they use to supply fresh and processing sweet corn to the markets. The findings show that New York sweet corn growers either produce sweet corn mainly for the fresh market or for the processing market. The marketing structures used by these two groups of sweet corn growers are different; therefore, their marketing needs are also different. Processing sweet corn growers generally use only one main marketing outlet to sell their corn – to either a New York processor or a growers' cooperative, and they do not use specific tools to promote their sweet corn sales. In contrast, fresh market sweet corn growers usually use multiple marketing channels to sell their products and apply different marketing tools to promote the sweet corn sales.

When considering the most limiting factors to processing sweet corn profitability, growers are more concerned about production factors, including low yield, adverse weather, disease and pest problems, and increased input costs. Oversupply and decreased consumer demand are two other limiting factors mentioned. They also feel that opportunities for developing future processing sweet corn markets exist in expanding use of sweet corn in new processing products, improving processor competitiveness, and branding.

While growers producing sweet corn for fresh market also indicated production factors, such as low yield, adverse weather and pest & disease problems, as some important limiting factors to sweet corn profitability, they are more concerned about marketing factors than processing sweet corn growers. Several market factors, including price competition, market competition, oversupply, and inability to supply consistent quality products, are emphasized by fresh market sweet corn growers as major concerns. They also identify increasing and diversifying marketing efforts, supplying high quality and fresh products, developing new and improved varieties (better quality, disease/pest resistance, higher yield, etc.) as the top opportunities for future fresh sweet corn market development.

The two groups of sweet corn growers (fresh market and processing) have different concerns and needs. Therefore, while working with growers directly would be an effective way to develop marketing strategies for fresh market sweet corn, it might be more effective to work with processors and growers cooperatives when exploring market opportunities for processing sweet corn.

- **Exploring Market Opportunities**

While the major season for New York sweet corn is between July and September, extending the season for market development is in many growers' minds. Among growers who marketed their sweet corn for fresh use in 2000, about one-third also purchased some sweet corn from other growers to resell; however, the amount purchased from out-of-state sources is minimal. Growers could target a bigger market share by extending their own production season through the

adoption of new varieties, establishing production in other growing regions, or by developing strategic alliances with growers in other regions so that they could extend the supply season and might even become year-round suppliers for sweet corn.

Wholesaling to supermarkets was the most important marketing channel for selling New York fresh market sweet corn. More than half (64 percent) of the sweet corn produced in New York for fresh market consumption was sold through supermarkets. Therefore, the ability to segment different sectors in the supermarket industry, understand buying trends and behavior in each sector, and meet the demands of supermarket buyers in those sectors are important for developing markets and ensuring profitability for New York sweet corn.

The surveyed New York growers received a wide range of prices for their fresh market sweet corn, between \$1.00 per dozen (or \$9.52 per cwt) and \$3.50 per dozen (or \$33.32 per cwt) for wholesale and between \$2.00 per dozen (or \$19.04 per cwt) and \$5.00 per dozen (or \$47.60 per cwt) for retail. The wide range of prices received implies that whether selling through wholesale or retail channels, growers could find buyers who were willing to pay higher prices for specific products meeting their demands. Growers need to identify those markets and produce sweet corn to meet those markets' needs and avoid price wars among suppliers.

The marketing tools used most frequently by the fresh sweet corn growers surveyed are newspaper advertising and personal relationships, used by 46 percent and 50 percent of the respondents, respectively. However, the marketing tools rated most effective are other tools (mainly word-of-mouth and reputation), personal relationships, and direct sales calls. Tools rated least effective are trade newspaper and magazine advertising, yellow pages in phone books, and web sites. As farms get larger, they generally are involved in more marketing activities. Different size farms have differing opinions on various marketing tools. It could be due to that different size farms are selling to different customer sectors. A key for successfully utilizing different marketing tools will be to select tools which can most effectively reach different target markets.

Finally, growers in this study identified both production and marketing issues as challenges limiting sweet corn profitability as well as opportunities for developing sweet corn market. A combination of increasing off-season demand, marketing catering to the general upward trend in vegetable use, focusing on new fresh and processing product development, and industry interest in supporting a research and promotion program are keys to expand sweet corn markets.

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